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MCB CAMP LEJUENE
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U S EPA REGION IV COMMENTS ON THE DRAFT RECORD OF DECISION OU 25, SITE
UXO 19 MCB CAMP LEJUENE NC
07/20/2015
U S EPA REGION IV ATLANTA GA



Draft

Record of Decision Operable Unit 25, Site UXO-19

Marine Corps Installations East – Marine Corps Base Camp Lejeune
North Carolina
July 2015

1 Declaration

Site Name and Location

This Record of Decision (ROD) presents the Selected Remedy for controlling explosive hazards from munitions and explosives of concern (MEC)/material potentially presenting an explosive hazard (MPPEH) at Operable Unit (OU) 25, Military Munitions Response Program (MMRP) Site UXO 19, located at Marine Corps Installations East-Marine Corps Base Camp Lejeune (MCIEAST-MCB CAMLEJ), in Onslow County, North Carolina. Site UXO-19 is a cantonment area, known as Camp Devil Dog, that is used for training.

MCIEAST-MCB CAMLEJ was placed on the United States Environmental Protection Agency (USEPA) National Priorities List (NPL) effective November 4, 1989 (USEPA Identification: NC6170022580). The remedy set forth in this ROD was selected in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986, and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

This decision is based on information contained in the Administrative Record (AR) file for this site. Information not specifically summarized in this ROD or its references but contained in the AR has been considered and is relevant to the selection of the remedy at OU 25. Thus, the ROD is based on and relies upon the entire AR file in making the decision. Because of the NPL listing, and pursuant to CERCLA, the USEPA Region 4, North Carolina Department of Environment and Natural Resources (NCDENR), the Department of the Navy (Navy), and the United States Marine Corps (USMC) entered into a Federal Facilities Agreement (FFA) for MCIEAST-MCB CAMLEJ in 1991. The primary purpose of the FFA is to ensure that the environmental impacts associated with past and present activities at the Base are thoroughly investigated. The Installation Restoration Program (IRP) is responsible for ensuring that appropriate CERCLA response alternatives are developed and implemented as necessary to protect public health, welfare, and the environment. Additionally, because of previous use of the site as a range, resulting in potential presence of MEC/MPPEH, the site is managed under the MMRP. No enforcement activities have been recorded at Site UXO-19.

Statement of Basis and Purpose

The Navy is the lead agency and provides funding for site cleanups at MCIEAST-MCB CAMLEJ. The remedy set forth in this ROD has been selected by the Navy, USMC, and USEPA. NCDENR, the support regulatory agency, actively participated throughout the investigation process, has reviewed this ROD and the materials on which it is based, and concurs with this Selected Remedy.

Scope and Role of Response Action

OU 25 is solely comprised of UXO-19 and is one of 25 OUs in the IRP at MCIEAST-MCB CAMLEJ. Information on the status of all the OUs and sites at MCIEAST-MCB CAMLEJ can be found in the current version of the Site Management Plan, available as part of the AR. This ROD presents the final remedial action for Site UXO-19 and OU 25.

Summary of Comments on Record of Decision Operable Unit 25, UXO-19

Page: 1

 Number: 1 Author: DBUXBA02 Subject: Sticky Note Date: 7/20/2015 5:14:07 PM

Add "and remediation of hazardous substances undertaken in accordance with CERCLA when determined necessary to protect human health and the environment."

1.1 Selected Remedy

Assessment of the Site

Previous investigations at Site UXO-19 have identified unacceptable risks to human receptors from explosive hazards. Potential explosive hazards were significantly reduced during the MMRP investigations; however, there are limitations to MMRP investigations including those imposed by instrument limits and site conditions that prevent 100 percent removal. Therefore, MEC/MPPEH may remain onsite in those areas where it could not be detected because of the above limitations and contact with the types of MEC/MPPEH that may be present could potentially result in injury or fatality. The response action selected in this ROD is necessary to protect public health or welfare from potential explosive hazards.

The Selected Remedy for Site UXO-19 is land use controls (LUC) ¹ to reduce or prevent the potential for direct physical contact ² with MEC/MPPEH to allow current and reasonably anticipated land use (infantry training) at the site to continue. ³

Statutory Determinations

The Selected Remedy is protective of human health, complies with federal and state **applicable or relevant and appropriate requirements (ARARs)**, is cost-effective, and uses permanent solutions to the maximum extent practicable. The Selected Remedy does not satisfy the statutory preference for treatment as a principal element because the quantity and distribution of MEC/MPPEH most likely to be encountered (from the surface to 18 inches below the ground surface [bgs]) was significantly reduced during the MMRP intrusive investigation, and the site is located on a restricted military base. If MEC/MPPEH were encountered, the likely receptors would be military personnel and other workers who have been trained in unexploded ordnance (UXO) avoidance. Furthermore, many of the items would need aggressive contact such as kicking, digging, striking, or throwing in order to explode. Therefore, the potential for exposure that could result in an explosion causing an injury or fatality is low.


Because the remedy will result in potential explosive hazards remaining onsite that prevent unlimited use and unrestricted exposure, a statutory review will be conducted within 5 years after initiation of the remedial action to ensure that the remedy is or will be protective of human health and the environment. The Navy will review the final remedial action no less than every 5 years after initiation of the remedial action, ³ in accordance with CERCLA Section 121(c) and the NCP at 40 Code of Federal Regulations (CFR) § 300.43 ⁴ (9f)(4)(ii). If results of the 5-year reviews reveal that remedy integrity is compromised and protection of human health is insufficient, additional remedial actions would be evaluated by the parties and implemented by the Navy.


1.2 Data Certification Checklist

The following information is included in the Decision Summary, Section 2 of this ROD. Additional information can be found in the AR¹ file for MCIEAST-MCB CAMLEJ, Site UXO-19.

- Types of MEC/MPPEH identified during the MMRP intrusive investigations (Section 2.1, Section 2.5, and Table 4)
- Explosive hazard evaluation (Section 2.6)
- How source materials constituting principal threats (MEC) are addressed (Section 2.7)
- Current and reasonably anticipated future land use assumptions used in the baseline risk assessment and ROD (Section 2.6)
- Potential land use that will be available at the site as a result of the Selected Remedy (Section 2.10.3 and Table 10)
- Estimated capital, annual operations and maintenance, and total present-worth costs, discount rate, and the number of years over which the remedy cost estimates are projected (Section 2.9 and Table 8)

¹ **Bold blue text** identifies detailed site information available in the AR and listed in the References Table.

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Highlight term and add to glossary


 Number: 2 Author: DBUXBA02 Subject: Sticky Note Date: 7/21/2015 1:18:02 PM
Add sentence that describes generally what are ICs and LUCs and their purpose. See EPA PIME guidance Section 2 page 2.

[excerpt from guidance to use as a guide.]

**"2. DEFINITION AND ROLE OF
INSTITUTIONAL CONTROLS**

For purposes of this document, EPA defines ICs as non-engineered instruments, such as administrative and legal controls, that help to minimize the potential for exposure to contamination and/or protect the integrity of a response action. [HYPERLINK \l "bookmark1" 4](#) ICs typically are designed to work by limiting land and/or resource use or by providing information that helps modify or guide human behavior at a site. ICs are a subset of Land Use Controls (LUCs). LUCs include engineering and physical barriers, such as fences and security guards, as well as ICs. The federal facility program may use either term in its decision documents. For purposes of this guidance, the term ICs is used, but the concepts also apply to LUCs."

See inserted last page publication title.


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typo - should be (f)

1.3 Authorizing Signatures

This ROD presents the Selected Remedy at Site UXO-19, OU 25, at MCIEAST-MCB CAMLEJ, located in Onslow County, North Carolina.

Y. R. ESCALANTE
Colonel, U.S. Marine Corps
Deputy Commander
Marine Corps Installations East-Marine Corps Base, Camp Lejeune

Date


² ~~Randall Chaffins~~ ¹
³ ~~Acting~~ Director, Superfund Division
United States Environmental Protection Agency, Region 4

Date


With concurrence from:

Linda Culpepper
Director, Division of Waste Management
North Carolina Department of Environment and Natural Resources

Date

 Number: 1 Author: DBUXBA02 Subject: Sticky Note Date: 7/21/2015 1:18:47 PM
Change to Franklin Hill, Director

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2.10.1 Rationale for the Selected Remedy

Although treatment is preferred wherever feasible, LUCs were selected because they provide a similar level of long-term protection as the active removal alternatives, and previous intrusive actions have already removed MEC/MPPEH from the surface to 18 inches bgs, the depth interval most likely to encounter MEC/MPPEH. Implementation of LUCs would be significantly less disruptive to current training operations, and would be less expensive than Alternatives 3 and 4, both of which would still require LUCs in the long-term.

2.10.2 Description of the Selected Remedy


The Selected Remedy (LUCs) for Site UXO-19 includes the following components:


- Installing warning signs around the perimeter of the site.
- Requiring UXO construction support for all intrusive activities greater than 18 inches bgs in the undeveloped area and any intrusive activity in the developed/inaccessible area.
- Requiring munitions safety awareness training for all personnel working within the site boundary.
- Revising the Base Master Plan and/or geographic information systems mapping with the land use restrictions marked for this site.
- Filing a Notice of Contaminated Site in Onslow County real property records in accordance with North Carolina General Statutes 143B-279.9 and 143B-279.10.

The LUC performance objective is to restrict activities within areas possibly containing MEC/MPPEH to prevent exposure that could result in an explosion, causing injury or death  1

The following land use restrictions would be implemented:


- **Intrusive Activities Control (MEC) in Developed/Inaccessible Areas** – Require UXO construction support for any intrusive activities within the areas identified as developed or inaccessible within Site UXO-19. Require Recognize, Retreat, Report (3R) munitions safety awareness training for Base personnel and subcontractors working within the Site UXO-19 boundary.
- **Intrusive Activities Control (MEC) in Undeveloped Areas** – Restrict intrusive activities within the undeveloped area with potential explosive safety hazards to less than 18 inches bgs. Require UXO construction support for all intrusive activities greater than 18 inches bgs and 3R munitions safety awareness training for all personnel working within the Site UXO-19 boundary.


The Navy  2 and MCIEAST-MCB CAMLEJ are responsible for implementing, maintaining, reporting on, and enforcing the LUCs. The estimated LUC boundaries are shown on **Figure 6**; the actual LUC boundaries will be finalized in the Land Use Control Implementation Plan (LUCIP). The LUC implementation actions, including enforcement requirements, will also be provided in the LUCIP. Actual construction support requirements will be determined by the Installations Explosives Safety Officer, Marine Corps Systems Command, and the Department of Defense Explosives Safety Board. Construction support shall be determined by submission of an Explosives Safety Submission and/or an Explosives Safety Submission Determination Request, in accordance with appropriate Navy and Marine Corps regulations.


The Navy will submit the LUCIP  3 to USEPA and NCDENR for review and approval pursuant to the primary document review procedures stipulated in the FFA. The Navy will maintain, monitor (including conducting periodic inspections), and enforce the LUCs according to the requirements contained in the LUCIP. LUCs will be maintained indefinitely unless additional action is taken to remove potential explosive hazards, allowing for unlimited use and unrestricted exposure. Because potential explosive hazards remain and unlimited use and unrestricted exposure will not be achieved, the Navy will review the final remedial action no less than every 5 years to assess the protectiveness of the remedy.

2.10.3 Expected Outcomes of the Selected Remedy

Current land use is expected to continue at Site UXO-19. Exposure to MEC/MPPEH will be controlled through LUCs. **Table 10** summarizes the unacceptable risks, the RAO identified to address the risks, the remedy

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Add another LUC Objective : "Maintain the the integrity of any current or future remedial or monitoring system such as the warning signs."

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Add recommended language from EPA LUC Checklist #8 - [Although the Navy and MCIEAST-MCB CAMLEJ may later transfer these procedural responsibilities to another party by contract, property transfer agreement, or through other means, the Navy shall retain ultimate responsibility for the remedy.](#)

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Ref. EPA LUC Checklist #9. Add "within 90 days of ROD signature"

components intended to achieve the RAO, the metrics that measure the remedial action progress, and the expected outcome that the remedy will have.

TABLE 10
Expected Outcomes

Risk	RAO	Remedy Component	Metric	Expected Outcome
Potential explosive hazard from contact with MEC/MPPEH	Reduce or prevent the potential for direct physical contact with MEC/MPPEH to allow current and reasonably anticipated land use (infantry training) at the site to continue.	LUCs	Maintain and monitor LUCs quarterly	Infantry Training

2.10.4 Statutory Determinations


Remedial actions undertaken at NPL sites must meet the statutory requirements of Section 121 of CERCLA and thereby achieve adequate protection of human health and the environment, comply with ARARs of both federal and more stringent state laws and regulations, be cost-effective, and use, to the maximum extent practicable, permanent solutions and alternative treatment or resource recovery technologies. In addition, CERCLA includes a preference for remedies that employ treatment that permanently and significantly reduces the volume, toxicity, and/or mobility of hazardous waste as the principal element. The following discussion summarizes the statutory requirements that are met by the Selected Remedy.

Protection of Human Health and the Environment—The Selected Remedy (LUCs) protect human health and the environment by prohibiting actions that could result in an explosive hazard.

Compliance with ARARs—Section 121(d) of CERCLA, as amended, specifies, in part, that remedial actions for cleanup of hazardous substances must comply with requirements and standards under federal or more stringent state environmental laws and regulations that are applicable or relevant and appropriate to the hazardous substances or particular circumstances at a site or obtain a waiver. See also 40 CFR § 300.430(f)(1)(ii)(B). ARARs include only federal and state environmental or facility citing laws and regulations and do not include occupational safety or worker protection requirements. Compliance with Occupational Safety and Health Administration (OSHA) standards is required by 40 CFR § 300.150; therefore, the CERCLA requirement for compliance with or waiver of ARARs does not apply to OSHA standards. In addition to ARARs, the lead and support agencies may, as appropriate, identify other advisories, criteria, or guidance to-be-considered for a particular release. In accordance with 40 CFR § 300.400(g), the Navy, USEPA, and NCDENR have identified the ARARs for the Selected Remedy. **Appendix A** lists, respectively, the location-, and action-specific ARARs and to-be-considered (TBC) criteria for the Selected Remedy. There are no chemical-specific ARARs for the Selected Remedy. The Selected Remedy will meet all identified ARARs and TBCs.


Cost-effectiveness—The Selected Remedy is cost-effective and represents a reasonable value for the money to be spent. The following definition was used to determine cost-effectiveness: “A remedy shall be cost-effective if its costs are proportional to its overall effectiveness” (NCP §300.430[f][1][ii][D]). This analysis was accomplished by evaluating the overall effectiveness of those alternatives that satisfied the long-term effectiveness and permanence; reduction in toxicity, mobility, and volume through treatment; and short-term effectiveness. The overall effectiveness of the Selected Remedy was compared to costs to determine cost-effectiveness. The Selected Remedy’s costs were determined to be proportional to overall effectiveness, thus representing a reasonable value for the money.

The estimated present-worth cost of the Selected Remedy is \$570,000, and the cost-estimate timeframe is predicted to be approximately 30 years. Alternatives 3 and 4 present-worth costs are significantly higher and are not expected to reduce the remedial timeframe because residual MEC/MPPEH may be present even after removal actions are completed.

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Revise to strike the term 'adequate'. See suggested rewrite below.

"Remedial actions undertaken at National Priority List (NPL) sites must meet the statutory requirements of Section 121 of CERCLA and ~~thereby achieve adequate~~
~~be protective of~~ human health and the environment, comply with ARARs of both federal and more stringent state environmental laws and regulations unless a
waiver is justified, be cost-effective, and utilize to the maximum extent practicable, permanent solutions and alternative treatment or resource recovery
technologies.

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Please provide better description of how the LUCs will prevent exposure and limit the actions of personnel within the Site.

Utilization of Permanent Solutions and Alternative Treatment Technologies or Resource Recovery Technologies to the Maximum Extent Practicable—Although the use of treatment technologies is typically preferred, based on the current state of the industry, there is no guarantee of complete removal of MEC/MPPEH. Therefore, LUCs would be required regardless of the alternative selected.

Preference for Treatment as a Principal Element—While the Selected Remedy does not satisfy the statutory preference for treatment as a principal element, previous investigations and removal actions have removed MEC/MPPEH likely to be encountered at Site UXO-19. LUCs are expected to be effective to prevent exposure to MEC/MPPEH.

Five-year Review Requirements—This remedy will result in MEC/MPPEH remaining onsite, preventing unlimited use and unrestricted exposure; therefore, in accordance with CERCLA Section 121(c) and the NCP at 40 CFR § 300.430 (f)(4)(ii), a statutory review will be conducted by the Navy within 5 years after initiation of remedial action to ensure that the remedy is, or will be, protective of human health and the environment. If the remedy is determined not to be protective of human health and the environment because, for example, LUCs have failed, then additional remedial actions would be evaluated by the FFA parties, and the Navy may be required to undertake additional remedial action.

2.11 Community Participation

The Navy, USMC, USEPA, and NCDENR provide information regarding the cleanup of MCIEAST-MCB CAMLEJ to the public through the Community Relations Program, which includes a Restoration Advisory Board, public meetings, the AR file for the site, and announcements published in local newspapers. Restoration Advisory Board meetings continue to be held to provide an information exchange among community members, the Navy, USMC, USEPA, and NCDENR. These meetings are open to the public and are held quarterly.


In accordance with Sections 113 and 117 of CERCLA, the Navy provided a public comment period for the Site UXO-19 Proposed Plan from February 25 through April 24, 2015. A public meeting to present the Proposed Plan was held on April 8, 2015, at Coastal Carolina Community College. Public notice of the meeting and availability of documents was placed in *The Jacksonville Daily News* and *The Globe* newspapers on February 10 and February 13, 2015, respectively.

The AR, Community Involvement Plan, IRP fact sheets, and final technical reports concerning Site UXO-19 can be obtained from the IRP web site: <http://go.usa.gov/Dy5T>. Internet access is available to the public at the following location:

Onslow County Public Library
58 Doris Avenue East
Jacksonville, North Carolina 28540
(910) 455-7350

2.12 Documentation of Significant Changes


The Proposed Plan for Site UXO-19 was released for public comment on February 25, 2015. No comments were submitted during the public comment period. No significant changes to the remedy, as originally identified in the Proposed Plan, were necessary or appropriate.


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Purpose of this Section is to describe whether the remedy meets these expectations not provide a rationale why no treatment was used. Revise to include a sentence(s) that states the remedy does not use excavation and treatment (e.g., detonation of UXO) or resource recovery technologies (e.g., recycling spent munitions).

Appendix A
Applicable and or Relevant and Appropriate Requirements

Federal and North Carolina Location-Specific ARARs			
Location	Requirement	Prerequisite	Citation
Presence of Migratory birds listed in 50 CFR 10.13	No person may take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such bird except as may be permitted under the terms of a valid permit issued pursuant to the provisions of this part and part 13 of this chapter, or as permitted by regulations in this part, or part 20 of this subchapter (the hunting regulations).	Action that have potential impacts on, or is likely to result in a 'take' (as defined in 50 CFR 10.12) of migratory birds – Applicable	Migratory Bird Treaty Act, 16 U.S.C. §703(a) 50 CFR 21.11
Federal and North Carolina Action-Specific ARARs and TBCs			
Action	Requirement	Prerequisite	Citation
Offsite Regulatory Requirements Institutional Controls for Contamination Left in Place			
Notice of Contaminated Site	Prepare and certify by professional land surveyor a survey plat which identifies contaminated areas which shall be entitled "NOTICE OF CONTAMINATED SITE".	Contaminated site subject to current or future use restrictions included in a remedial action plan as provided in G.S. 143B-279.9(a) - Applicable	NCGS 143B-279.10(a)
	Notice shall include a legal description of the site that would be sufficient as a description in an instrument of conveyance and meet the requirements of NCGS 47-30 for maps and plans.		
	The Survey plat shall identify: <ul style="list-style-type: none"> the location and dimensions of any disposal areas and areas of potential environmental concern with respect to permanently surveyed benchmarks; the type location, and quantity of contamination known to exist on the site; and any use restriction on the current or future use of the site. 		NCGS 143B-279.10(a)(1)-(3)
	The deed or other instrument of transfer shall contain in the description section, in no smaller type than used in the body of the deed or instrument, a statement that the property is a contaminated site and reference by book and page to the recordation of the Notice.	Contaminated site subject to current or future use restrictions as provided in G.S. 143B-279.9(a) that is to sold, leased, conveyed or transferred - Applicable	NCGS 143B-279.10(e)

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Strike 'Offsite Regulatory Requirements'

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Revise to 'To Be Considered'

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Revise to 'To Be Considered'



Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites

1. PURPOSE

The purpose of this guidance is to provide managers of contaminated sites, site attorneys,¹ and other interested parties with information and recommendations that should be useful for planning, implementing, maintaining,² and enforcing institutional controls (ICs) for Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or Superfund); Brownfields; federal facility; underground storage tank (UST); and Resource Conservation and Recovery Act (RCRA) site cleanups.³ It highlights some of the common issues that may be encountered and provides an overview of EPA's policy regarding the roles and responsibilities of the parties involved in the various life-cycle stages of ICs while

¹ The terms "site manager" and "site attorney," as used in this document, refer to personnel from the lead agency involved in a CERCLA (remedial and removal), Brownfields, federal facility, UST, or RCRA cleanup project. Where the lead agency is a federal agency other than the EPA, EPA and the federal agency may share some site manager/site attorney responsibilities or EPA may retain them independently depending on the responsibility under any of the five cleanup programs. The term "site" is used generically in this guidance to also represent areas of contamination managed under all five of these cleanup programs. The terms "CERCLA," and "Superfund," generally include both remedial and removal sites. In addition, the term "responsible party" as used in this document is intended to mean a person or entity with cleanup or IC responsibilities or expectations under the various cleanup programs listed above.

² The term "maintenance" refers to those activities, such as monitoring and reporting, that ensures ICs are implemented properly and functioning as intended.

³ This document provides guidance to the Regions on how EPA generally intends to plan, implement, maintain, and enforce institutional controls as part of a cleanup project. While this document relies heavily in many areas on CERCLA-specific terminology and examples, it is intended to provide guidance for all EPA cleanup programs, including RCRA, Brownfields, federal facilities, and underground storage tanks. The guidance is designed to help promote consistent national policy on these issues. It does not, however, substitute for CERCLA, RCRA, or EPA's regulations, nor is it a regulation itself. Thus, it does not impose legally binding requirements on EPA, States, or the regulated community, and may not apply to a particular situation based upon the circumstances. EPA, State, tribal, and local decision-makers retain the discretion to adopt approaches on a case-by-case basis that differ from this guidance where appropriate. Any decisions regarding a particular site will be made based on the applicable statutes and regulations.

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recognizing that there are some differences among the cleanup programs.

This is the second in a series of guidance documents on the use of ICs. The first document, *Institutional Controls: A Site Manager's Guide to Identifying, Evaluating and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups*, Office of Solid Waste and Emergency Response (OSWER) 9355.0-74FS-P, EPA 540-F-00-005, September 2000, (*A Site Manager's Guide to ICs*), provides more detailed guidance on identifying, evaluating, and selecting ICs at CERCLA and RCRA cleanups.

Both the *Site Managers Guide to ICs* and this guidance address key questions that Regions should ask when considering ICs. The recommendations provided herein should among other things, help site managers and site attorneys: (1) understand the strengths, weaknesses, and costs for planning, implementing, maintaining, and enforcing ICs, (2) evaluate ICs as rigorously as any other response alternative, and (3) develop procedures to coordinate with